



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1

1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

August 16, 2004

Curtis Frye
U.S. Department of the Navy
Naval Facilities Engineering Command
Northern Division
10 Industrial Highway
Code 1823, Mail Stop 82
Lester, PA 19113-2090

Re: Draft Soil Pre-Design Investigation Report for the Old Fire Fighting Training Area

Dear Mr. Frye:

EPA reviewed the *Soil Pre-Design Investigation Report for the Old Fire Fighting Training Area, Naval Station Newport, Newport, Rhode Island* dated July 2004 in light of its completeness, technical accuracy, and consistency. Detailed comments are provided in Attachment A.

This Soil Pre-Design Investigation Report includes recommended excavation depths. Rhode Island Department of Environmental Management (RIDEM) regulations impose the residential direct contact concentrations and the leachability criteria down to the water table (or throughout the vadose zone). However, human health and environmental risk considerations and future use options dictate the required depth of excavation to remove contamination from the site. The design and work plan must demonstrate that the proposed excavation plan addresses risk and future use concerns.

The depths of excavation proposed will leave significant contaminant concentrations, rubble, piping containing oil, oil saturated soils, and free product in the subsurface. For this reason, the excavation depths will need to be adjusted. Contamination would be left in place if the recommended excavation depths were implemented. It appears that unrestricted use of the site would not be attainable under the proposed excavation depths. EPA understands that a subsequent removal action for OFFTA soils is planned for the summer of 2005.

Although the initial excavation plan proposed by the Navy assumes that dewatering of excavations will not be feasible, adequate support for this assumption is not provided. If the Navy has some direct experience at the site to verify this claim, it should be presented in this report to support the Navy's position. However, it seems likely that dewatering would be feasible down to at least the mean low water (MLW) elevation and it may also be feasible below that elevation depending on the contact between the ocean and the excavations. Without evidence to the contrary, limiting excavations site-wide to the water table is not acceptable. Further discussion of this restriction imposed by the Navy is required.

It is not apparent that limiting the excavation at the Site to the high water elevation will adequately address the subsurface contamination. However, I recognize that excavating beyond this point would apparently involve work beyond the current scope of soil remediation. Nevertheless, EPA expects the Navy to conduct additional work to investigate and remove subsurface contamination from locations beyond the high water elevation. The remedial action needs to meet the remedial goals and be protective of human health and the environment.

I look forward to working with you and the Rhode Island Department of Environmental Management toward the cleanup of the Old Fire Fighting Training Area. Please do not hesitate to contact me at (617) 918-1385 should you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kymberlee Keckler', with a long horizontal flourish extending to the right.

Kymberlee Keckler, Remedial Project Manager
Federal Facilities Superfund Section

Attachment

cc: Paul Kulpa, RIDEM, Providence, RI
Cornelia Mueller, NETC, Newport, RI
Jennifer Stump, Gannet Fleming, Harrisburg, PA

ATTACHMENT A

<u>Page</u>	<u>Comment</u>
p. 1-1, §1.0	An objective of the pre-design investigation, according to the Work Plan, was to evaluate soils near the shoreline for geotechnical parameters for evaluation of a potential stone revetment to prevent shoreline erosion. The results of this evaluation and any recommendations were not discussed in the pre-design investigation report.
p. 3-1, §3.0	The last sentence in the third paragraph states that the high tide line will be the limit of excavation for the planned removal action. It is not apparent that this is appropriate. Furthermore, the high tide line is not identified on any of the figures in this report. Please identify the high tide line on the figures.
p. 4-1, §4.0	Section 2.5.4 of the Work Plan states that the limit on the vertical excavation would be bedrock. The decision rule in Section 2.5.5 of the Work Plan states that construction debris will be included in the removal action regardless of chemical content. However, it does not appear that the proposed excavation volume presented in this report includes any construction debris below the elevation of the water table.
p. 4-3, §4.1.2	The first sentence in the last paragraph refers to eight borings in Area 2. However, there were only five borings drilled in Area 2.
p. 4-3, §4.1.3	The first sentence in the second paragraph in this section states that the bottom of fill in cross-section B-B' ranges from elevation 2.5 to 4.4 feet. This is not correct according to Figure 4-4, which indicates that the correct elevation range is -4.0 to 4.3 feet. Also, the second sentence misstates the range for cross-section C-C' based on review of Figure 4-4. The correct range for C-C' should be elevation -0.5 to 1.4 feet. Finally, the stated range for the bottom of fill for cross-section D-D' is incorrect; it should be elevation 3.0 to 6.9 feet. Please correct these discrepancies.
p. 4-4, §4.2.1	The second last sentence in the second paragraph states that the fill thickness at SB410 is 8 feet. However, Figure 4-3 indicates that it is 6 feet thick. Please correct.
p. 4-4, §4.2.1	The third paragraph states that the bedrock in Area 3 is much deeper than bedrock to the east and west. However, this statement is not consistent with the figures. Please correct the text to be consistent with the figures.
p. 4-5, §4.2.1	Please edit the first sentence in the first paragraph on this page to refer to 17 of 19 borings and test pits. Then edit the second sentence to indicate where, other than TP-10, no samples were collected.
p. 4-6, §4.2.2	The partial paragraph at the top of the page states that the fill thickness in Area 4 was at least 8 feet thick. This is not correct. According to Figure 4-5, the fill thickness in Area 4 ranged from 0.5 to 10 feet. Please correct.

p. 4-6, §4.2.2	The fourth sentence in the partial paragraph at the top of the page refers to organic layers in SB402 to the west. However, SB402 is on the east side of Area 4. Please review and correct the reference.
p. 4-7, §4.2.3	The discussion in the paragraph at the top of the page is not consistent with the information in Figure 4-5. Please correct the text.
p. 4-10, §4.3.3	The discussion in the second paragraph contains inconsistencies compared to Figure 4-6. Please review the discussions for cross-sections I-I' and K-K' compared to Figure 4-6 and correct the inconsistencies.
p. 5-1, §5.1.1	In the second sentence of the second paragraph the elevation range of -1.5 to 3.4 feet is mentioned. However, review of Figures 4-3, 4-4, and 4-7 suggests that the correct range should be -1.1 to 3.9 feet. Please correct as appropriate.
p. 5-4, §5.2	The text at the bottom of this page and continuing to page 5-5 does not make sense. It appears that some text has been inadvertently omitted. Please review and correct as appropriate.
p. 5-7, §5.3.2	The discussion for Area 1 refers to a bedrock high at SB417 and SB433. This is not correct according to Figure 4-3. The bedrock elevation at SB417 and SB433 is less than elevation -10.0 feet which makes it close to the lowest bedrock elevation at the Site. Please correct.
Figures 4-7 through 4-9	Please review the bottom of fill elevations presented in these figures as there appear to be several discrepancies between these elevations and the elevations presented in Figures 4-3 through 4-6.
Table 4-1	Beginning on page 2 of 8 and continuing on to page 3, some of the data are duplicated (from B-6 through SB420) and should be deleted.
Table 4-2A	The description of B-7(MW-4) under Area 2 is not consistent with the boring log data, which reported strong petroleum odors and black staining. Please correct the inconsistency.

Appendix F, Tables F-1 through F-3:

- a. Please review and correct the page numbering for the first three tables. Is page 6 of 7 the last page for Table F-3 or is there a page missing?

Appendix F, Table F-7:

- a. Some of the base grade elevations presented in this table do not agree with the planned elevations shown on Figure 4-1. Please correct.
- b. Grid Cell C2:
 1. B-11 contains lead exceeding 300 mg/kg down to elevation 2.4, so lead is also a depth driver in C2.
 2. The excavation depth in C2 should be at least as deep as the water table because contamination at SB415 and B-11 appears to extend down to or below the water table.
- c. Grid C4:
 1. The boring log for SB418 indicates soil saturated with oil down to an elevation 4 feet below MLW, although the intervals sampled did not have

exceedances for organic contaminants. Also, the greatest PID readings were found below the proposed excavation depth. Based on these findings, the proposed depth of excavation appears to be inadequate. Since SB418 is the only exploration in this grid cell, additional exploration of C4 is warranted before settling on an excavation depth for this grid cell.

d. Grid B4:

1. Contamination exceeding cleanup goals was detected down to MLW in at least the northeastern half of this grid, indicating a deeper excavation is warranted. Contamination found at SB406 suggests that deeper contamination may also exist west of SB407.

e. Grids B5, B6, & B7 and C5, C6, & C7:

1. Test pit and boring data and analytical results from all explorations in these areas suggest that contamination in these areas extends down to at least MLW, with visible petroleum contamination, high PID readings, strong odors, and analytical hits present down to these depths. At TP-12 a pipe containing oil was found 5 feet below grade and at TP-11 soil was reported as saturated with petroleum. Also, gasoline range organic (GRO) contamination located below the planned depth of excavation of was detected in SB409 and SB410 at 110 mg/Kg and at SB419, SB420, SB421, and SB432 ranging from 120 to 890 mg/Kg. GRO may be indicative of BTEX compounds. Although GRO is not specifically regulated, BTEX compounds are. Based on these data, the proposed excavation depth is not adequate in these grids.

f. Grid C8:

1. At SB422, analytical results showed PAH contamination at nine times greater than the cleanup goals at an elevation down to 7.8 with no sample collected from the subsequent interval between 5.8 and 7.8. Consequently, the proposed excavation down to elevation 7.8 is not considered adequate, as contamination is expected below elevation 7.8.
2. The proposed excavation depth in C8 is 3.8 feet shallower than C7, which abuts C8 on the west. Although it is expected that C8 will be excavated deeper based on the deeper contamination found at SB422, a transition to a deeper excavation will be expected on the western side of C8 to address the deeper contamination found in C7.
3. Note that grid C8 is missing from Area 5 (only 3,475 square feet were included in Area 3).

g. Grids A5, A6, & A7:

1. The proposed excavation plan for this area appears adequate since most contamination in Area 4 appears to be above the water table except for lead contamination at SB402 that reached 1,300 ppm at approximately the MLW elevation, more than 3 feet deeper than the planned excavation. Note that this lead is located in a peat deposit immediately beneath a deeper layer of fill. Therefore it is possible that unacceptable lead contamination is also located in the fill in the vicinity of the water table. If so, it should be removed.

h. Area 5, general:

1. The note in the column labeled "Controlling Depth" does not appear to be consistent with the excavation depths proposed for each grid cell. Please clarify the note or correct the apparent inconsistency so the intent is clear.

- i. Grid B8:
 - 1. Boring SB411 detected no contamination but boring B-14 had no recovery beneath the base elevation. Based on the depth of contamination found at TP-2 and TP-3, which abut Grid B8, excavation down to at least the water table for the northern and western portions of Grid B9 appears warranted.
- j. Grid B9:
 - 1. Neither boring B-15 nor SB412 had sufficient sample recovery at an elevation beneath the base elevation. Therefore this grid has not been adequately characterized. Additional work will be required to better characterize this grid in order to establish an excavation plan.
 - 2. Based on the depth of contamination found at TP-3, TP-13, and TP-16, excavation down to at least the water table appears warranted for much of the northern portion Grid B9.
- k. Grids C9 & C-10:
 - 1. EPA is concerned that the refusal elevations in these two grids may not be bedrock, but concrete. In C9, the playground area reportedly is built on high bedrock. However, B-2, which abuts the playground on the east, drilled easily to 14 feet below ground surface (bgs) and B-4, which abuts the playground on the west, also got down to 14 feet bgs. In C10, TP-06 reported a concrete slab at 7 feet bgs while TP-07, immediately adjacent to TP-06, reported conglomerate at 8 feet bgs. EPA will require confirmation that refusal reports are definitively either bedrock or concrete. Existing data are not definitive.
 - 2. B-2 had black, visibly stained soil at 6-8 feet bgs, but no organic samples were collected from that depth. The proposed excavation plan for Grid C9 should be adjusted to remediate this contamination.
- l. Grid C11:
 - 1. Given the magnitude and depth of contamination found in SB414 and SB431, located in grids bordering Grid C11, excavation in the northern and northwestern part of Grid C11 will need to be designed to remove deeper soil than the excavation plan indicates.
- m. Grid A8:
 - 1. Owing to significant concentrations of contamination found in A8 at elevations at least down to the MLW elevation, deeper excavation in grid A8 is indicated. TPH contamination of 21,000 mg/Kg was detected at TP-15 down to the 3 foot elevation suggesting that deeper soil contamination should also be expected at that location. Also, significant lead and PAH contamination exists down to the MLW elevation at other locations within grid A8.
- n. Grid A9:
 - 1. Strong odors and visibly stained soil were found in MW-2 down to the MLW elevation and lead in significant concentrations was detected at SB404 to beneath the MLW elevation. High TPH and lead contamination was also found at TP-13 and TP-16 at depths approaching the water table, suggesting that significant contamination goes even deeper and that the proposed excavation should be revised to address this contamination.
 - 2. EPA is further concerned that additional contamination will be found beneath the buried foundations/structures that exist at TP-13 and TP-16, including the possibility of oil-filled piping. These structures must be removed and the subsurface further explored as part of any remedial action.

- o. Grid B10:
 - 1. Given the magnitude of PAH contamination detected at SB413 in the 2-4 foot interval, it is not appropriate to terminate the excavation for B10 at 4 feet bgs. Deeper excavation is warranted to remove the contaminated soil that is expected to be found at greater depths.
- p. Grid B11:
 - 1. PAH contamination extends down to the MLW elevation and TPH contamination of 1200 mg/Kg was found below the MLW elevation suggesting that excavation only to the water table will leave significant contamination in place at depth.
- q. Grid A7:
 - 1. At SB428, PAH contamination exceeding the cleanup goal extends down to the MLW elevation.
- r. Grid A10:
 - 1. At SB430, lead was detected at concentrations exceeding the cleanup goal at elevations lower than MLW and TPH exceeded the cleanup goal down at least as deep as the MLW elevation. This suggests that the planned excavation depth may not be adequate.
- s. Grid B12:
 - 1. At SB431, oil-stained soils were found and TPH contamination was identified down to the MLW elevation. This suggests that the planned excavation depth may not be adequate.